

Amendments to the Claims:

1. (Currently Amended) ~~In a Multiple-Input, Multiple-Output communication system in which transmit data is communicated to a receiving station upon a plurality of channels and received as receive data thereat, an improvement of apparatus for facilitating detection at the receiving station of the transmit data responsive to values of the receive data received at the receiving station, said~~ An apparatus comprising:

a selector selectably operable configured to select a metric calculator value values for each respective ones of at least a selected number of the a plurality of channels in a Multiple-Input, Multiple-Output communication system in which transmit data is communicated to a receiving station upon the plurality of channels and received as receive data thereat, the metric calculator values selected for at least two of the selected number of the plurality of channels differing from one another; and

a decoder adapted to receive each metric calculator value selected by said selector and to the values of data, once received at the receiving station, said decoder for configured to separately decoding the decode values of the receive data received at the receiving station upon each of the at least the selected number of the plurality of channels, the decoding performed separately for the receive data received upon separate ones of the selected number of the channels, at complexity levels responsive to respective metric calculator values selected by said selector

wherein, for the values of the receive data received upon each of the channels, the decoder being configured to decode the values of the receive data includes being configured to perform a path length estimation for the respective channel, including being configured to calculate a path length for each of a number of possible paths upon which to estimate a minimum path length, the number of possible paths being selected based on the metric calculator value selected for the respective channel.

2. (Cancelled)

3. (Currently Amended) The apparatus of claim ~~2~~ 1, wherein ~~said path estimator performs the decoder is configured to perform a separate path-length estimations estimation for each of the selected number of channels.~~

4. (Currently Amended) The apparatus of claim 3, wherein ~~the path-length estimations performed by said path estimator pursuant to the path-length estimation scheme include estimation of path-lengths of at least a selected proportion of possible paths the decoder is configured to calculate a path length for each of a number of possible paths defined by possible values of the transmit data.~~

5. (Cancelled)

6. (Currently Amended) The apparatus of claim 3, wherein ~~said path estimator estimates the decoder being configured to perform a path length estimation includes being configured to estimate a maximum likelihood paths for each of the selected number of channels path.~~

7. (Currently Amended) The apparatus of claim 6, wherein ~~the maximum likelihood paths formed by said path estimator are formed the decoder being configured to estimate a maximum likelihood path includes being configured to estimate a maximum likelihood path using a QRD (QR Decomposition) technique upon a selected portion of the the selected number of possible paths of which the estimation of the paths is performed.~~

8. (Cancelled)

9. (Currently Amended) The apparatus of claim 1, wherein ~~the metric calculator values selected by said selector are selected responsive to the selector is configured to select the metric calculator values based on communication conditions upon the respective channels.~~

10. (Currently Amended) The apparatus of claim 9, wherein ~~said the~~ selector is further adapted configured to receive indications of the communication conditions upon the at least the ~~selected number of the plurality of~~ respective channels, and wherein ~~the selector being~~ configured to select the metric calculator values are ~~selected responsive to~~ based on the indications ~~provided to the selector~~.

11. (Currently Amended) The apparatus of claim 9, wherein the ~~complexity levels at which the decoding is performed by said decoder, responsive to the metric calculator values,~~ selected number of possible paths is inversely related to the communication conditions such that the ~~complexity levels increase~~ number of possible paths increases when the communication conditions worsen.

12. (Currently Amended) The apparatus of claim 1, wherein the communication system operates pursuant to an OFDM (Orthogonal Frequency Division Multiplexing) scheme in which channels are defined upon channel subcarriers, and wherein the metric calculator values selected by ~~said the~~ selector are representative of communication conditions upon each of the respective channel subcarriers.

13. (Currently Amended) The apparatus of claim 12, wherein the metric calculator values are maintained at a storage table, and wherein the selector is configured to select metric calculator values ~~selection made by said selector is of selected ones of from~~ the values maintained at the storage table.

14. (Currently Amended) The apparatus of claim 12, wherein the selector is configured to dynamically select the metric calculator values ~~are dynamically selected by said selector~~.

15. (Currently Amended) ~~In a method of communicating in a multiple input, multiple output communication system in which transmit data is communicated to a receiving~~

~~station upon a plurality of channels and received as receive data thereat, an improvement of a method for facilitating detection at the receiving station of the transmit data responsive to values of the receive data received at the receiving station, said A method comprising:~~

~~selecting a metric calculator value values for each respective ones of at least a selected number of the a plurality of channels in a Multiple-Input, Multiple-Output communication system in which transmit data is communicated to a receiving station upon the plurality of channels and received as receive data thereat, the metric calculator values selected for at least two of the selected number of the plurality of channels differing from one another; and~~

~~separately decoding values of the receive data received at the receiving station upon each of the at least the selected number of the plurality of channels, the decoding performed separately for the receive data received upon separate ones of the selected number of the plurality of channels, at complexity levels responsive to respective metric calculator values selected during said operation of selecting~~

~~wherein, for the values of the receive data received upon each of the channels, decoding the values of the receive data includes performing a path length estimation for the respective channel, including calculating a path length for each of a number of possible paths upon which to estimate a minimum path length, the number of possible paths being selected based on the metric calculator value selected for the respective channel.~~

16. (Currently Amended) The method of claim 15, wherein the metric calculator values selected during said operation of selecting are selected responsive to channel selecting the metric calculator values comprises selecting the metric calculator values based on communication conditions of upon the respective channels upon which the data is communicated to the receiving station.

17. (Currently Amended) The method of claim 15 wherein said operation of separately decoding performing a path length estimation comprises performing a maximum-likelihood path estimations of at least a selected proportion of possible paths estimation.

including calculating a path length for each of a number of possible paths defined by possible values of the transmit data.

18. (Cancelled)

19. (Currently Amended) The method of claim 15, wherein ~~the metric calculator values selected during said operation of selecting are dynamically selected responsive to~~ selecting the metric calculator values comprises selecting the metric calculator values channel based on communication conditions of upon the respective channels upon which the data is communicated.

20. (Currently Amended) The method of claim 15, wherein the communication system ~~utilizes~~ operates pursuant to an OFDM communication (Orthogonal Frequency Division Multiplexing) scheme, wherein the in which channels are defined upon channel subcarriers, and wherein selecting the metric calculator values calculated during said operation of selecting are comprises selecting the metric calculator values representative of communication conditions upon each of the respective channel subcarriers.

21. (New) An apparatus comprising:
circuitry configured to select metric calculator values for respective ones of a plurality of channels in a Multiple-Input, Multiple-Output communication system in which transmit data is communicated to a receiving station upon the plurality of channels and received as receive data thereat, the metric calculator values selected for at least two of the channels differing from one another,

wherein the circuitry is also configured to separately decode values of the receive data received upon separate ones of the channels, and

wherein, for the values of the receive data received upon each of the channels, the circuitry being configured to decode the values of the receive data includes being configured to perform a path length estimation for the respective channel, including being configured to

calculate a path length for each of a number of possible paths upon which to estimate a minimum path length, the number of possible paths being selected based on the metric calculator value selected for the respective channel.

22. (New) The apparatus of claim 21, wherein the circuitry being configured to perform a path length estimation includes being configured to estimate a maximum likelihood path.

23. (New) The apparatus of claim 22, wherein the circuitry being configured to estimate a maximum likelihood path includes being configured to estimate a maximum likelihood path using a QRD (QR Decomposition) technique upon the selected number of possible paths.

24. (New) The apparatus of claim 21, wherein the circuitry is configured to select the metric calculator values based on communication conditions upon the respective channels.